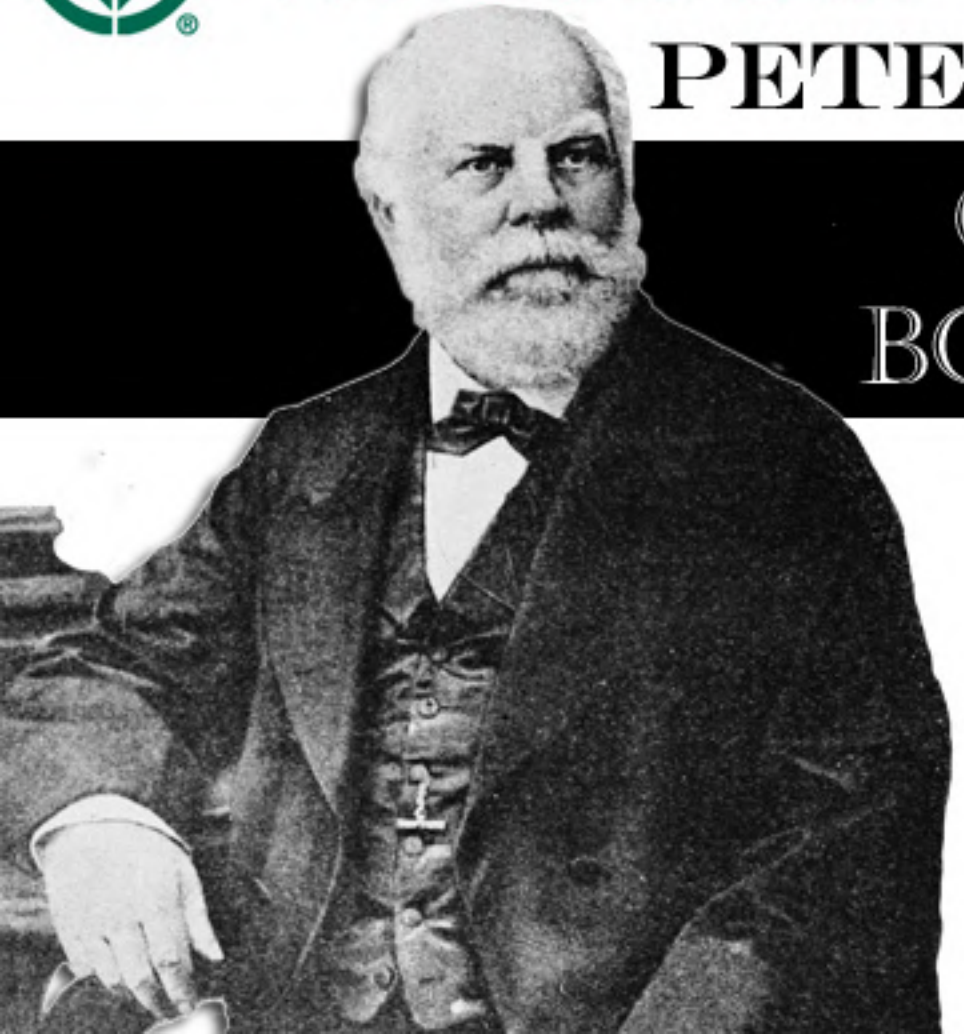
Missouri Botanical Garden

Peter H. Raven Library

George Engelmann Botanical Notebooks



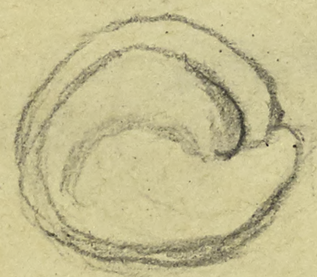
Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

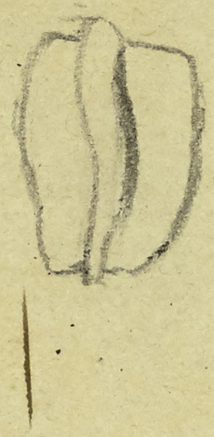
Opuntia polyantha

HBJ Missouri

x4

May 12 1875





12–15 areoles

15 seeds

colour deep purple,
& brown-purple & rather
dry, inside

seed very thick
rim narrow and
thin but rounded
not sharp
seed covered with tough
woolly fibres

THE NEW YORK BOTANICAL GARDEN
JOHN TORREY LIBRARY

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

C. Schroeder,

PHARMACEUTIST,

No. 3005 Olive Street,

Near Garrison Avenue, **ST. LOUIS, MO.**

No. *Date,* *187*

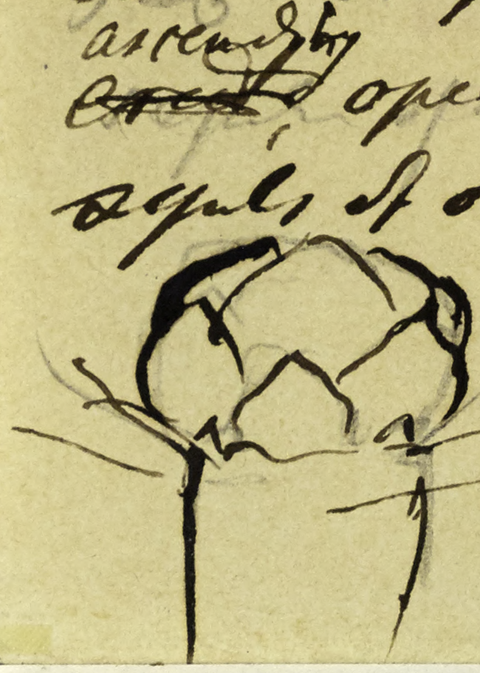
℞

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

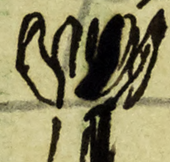
3017

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

July 23 1875 Op. megacantha Host Illinois
joints Conger and thrice the more as
also dark green, very stout spines even
on joints of ♂A this year. leaves short
red, erect, or prominent pulvilli
long clavate, often persistent 2 inches
flower not quite 3 inches diameter.
petals 8–10 obtuse, distinct, spatulate
narrow yellow with red stripe in ctr. the
to end tip; stigma 5–6 pale yellow
arcuately
~~erect~~ open, not conniv[illegible]



equal stamens 15–17.



Fruit [illegible]
Long clavate, often
persistent, with
red brown
[illegible] cottony
spines on edge of areoles.

PRESCRIBED BY GEO. ENGELMANN, M.D.
RESIDENCE.—N. W. Cor. Garrison Ave. & Locust St. OFFICE.—S. W. Cor. 4th & Elm

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

All medicine sent to any part of the City, if required.

GEO. B. FRESE,

Druggist & Pharmacist,

No. 3005 Olive Street, near Garrison Ave.,

SAINT LOUIS.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

3018

MISSOURI BOTANICAL GARDEN
copyright reserved

Opuntia pubescens

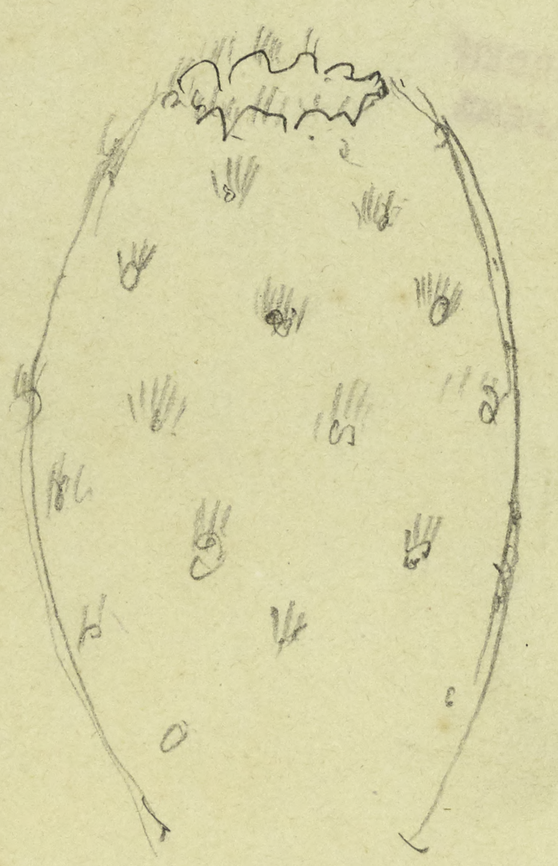
Wood Mesa 1865?

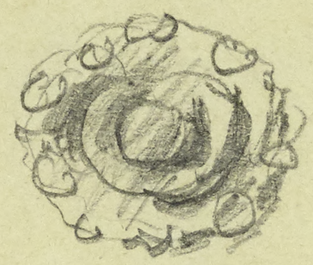
50–60 areolae – prominent, very densely wool
with yellowish bristles – surface dull dark red.

pharcels.

umbilicus not deep,

very much ridged





0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

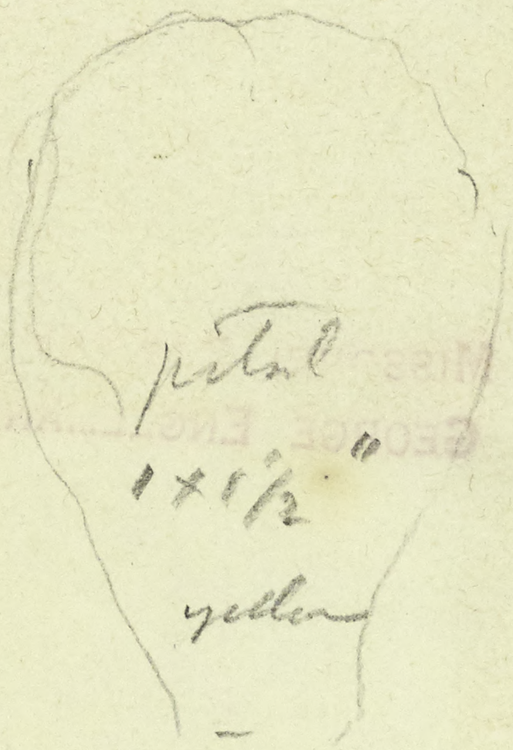
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

3019

J. McKittrick & Co. 86 N. Main St.

Opuntia cinerea July 1 1875

Mo Bot Gard



petal
1 × 1½"
yellow

7-8 ribs
3½ cm

stylo-sk

1 bud 25 areoles 2 spines
small, slender, recurved
areolar wool very bristly

2 or 10
exterior floral sepals
recurved, & inner ones about
strongly reflexed

flowers 3 feet
freely at Shaws
H. 3½ shrubby

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

3020

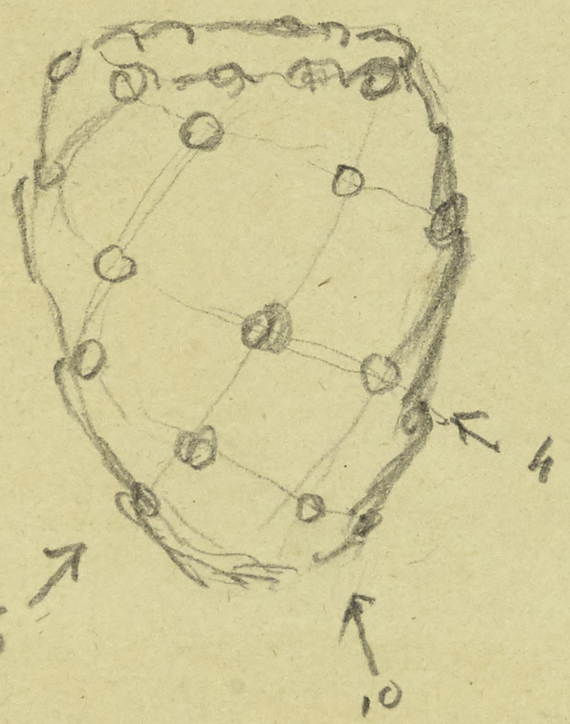
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Leith & Curlis
DRUGGISTS
Corner Fifth and Market Streets
Opposite Fifth Market
Saint Louis

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Opuntia cristata
Hort Bot Missouri

May 12 1875



fruit purple inside and outside

rim bord and very thick, rounded

few regular seeds

fruit purple somewhat tuberculate, umbilicus shallow

20 areoles 4 - 6. 10 spines

$\frac{10}{16}$ order

= another fruit $\frac{11}{18}$

Dodge
Hort.
Bot. Garden
St. Louis, Mo.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

C. Schroeder,

PHARMACEUTIST,

No. 3005 Olive Street,

Near Garrison Avenue, **ST. LOUIS, MO.**

No. *Date,* *187*

℞

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

3021

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

The state of health of the city improved considerably during the same period; and though exanthematic diseases continued to prevail to a certain extent, we entered with the month of April into the most healthy season, which is likely to continue until the hot summer weather begins to exhibit its trying effects on the inhabitants, which we may expect toward the latter part of May.

ATMOSPHERIC ELECTRICITY, TEMPERATURE AND HUMIDITY.

Observations made at St. Louis, Missouri, based upon daily observations at 6, 9, 12, 3, 6 *and* 9 *o'clock, from morning till night.* By A. WISLIZENUS, M. D., St. Louis, Mo.

I.—*Monthly Mean of Positive Atmospheric Electricity.*

MARCH.

YEAR.	6 A.M.	9 A.M.	12 M.	3 P.M.	6 P.M.	9 P.M.	MEAN OF MONTH	NO OF THUNDER STORMS.	PREVAILING WINDS.
1861..	12.0	12.0	9.8	8.1	9.0	8.0	9.8	3	W. & SE.
1862..	11.8	12.8	9.4	8.4	7.0	6.8	9.4	4	W. SE. & NW.
1863..	15.8	15.5	16.5	10.4	11.1	12.3	13.6	2	NW. W. NE. SE.
1864..	14.2	13.7	11.6	6.8	8.3	11.1	11.0	1	SE.
1865..	8.5	9.7	6.3	4.4	3.2	3.0	5.9	4	SE. W. & S.
Mean..	12.5	12.7	10.7	7.6	7.7	8.2	9.9	.....	.....

APRIL.

1861..	10.8	11.1	7.1	7.0	7.7	9.3	8.8	2	S. & W.
1862..	10.7	13.7	10.6	9.1	9.4	10.1	10.6	6	SE. NW. & NE.
1863..	10.0	9.9	10.0	6.2	8.0	8.6	8.8	2	SE. & NW.
1864..	9.1	11.6	6.8	7.5	7.8	8.0	8.5	3	NW. & SE.
1865..	3.8	4.8	2.7	3.3	2.7	2.6	3.3	4	W. SE.
Mean.	8.9	10.2	7.4	6.6	7.1	7.7	8.0	.....	.....

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN

3022

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Opuntia grandis

July 1863

2 styles of deflorate flowers, soaked

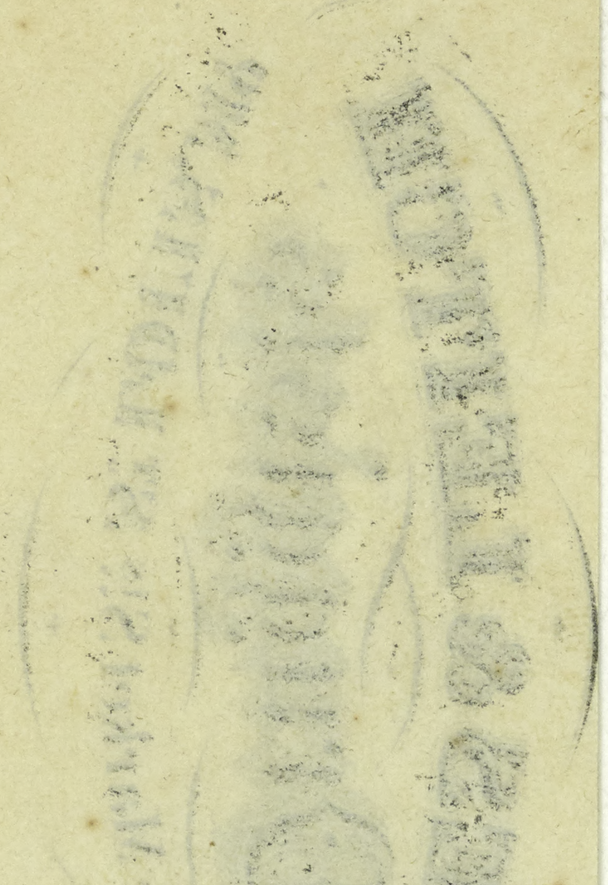
×30

×30

style ×4

point of branch of style

×153



3023

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

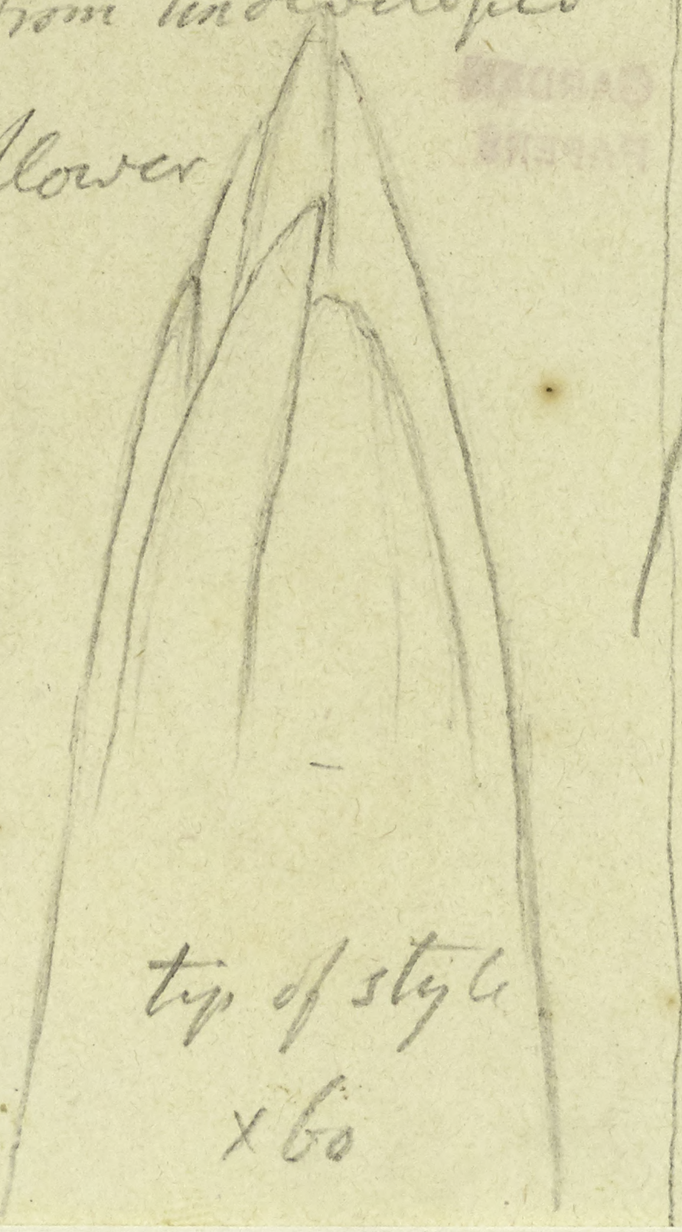
Opuntia grandis Jun 22 1864

-ovules

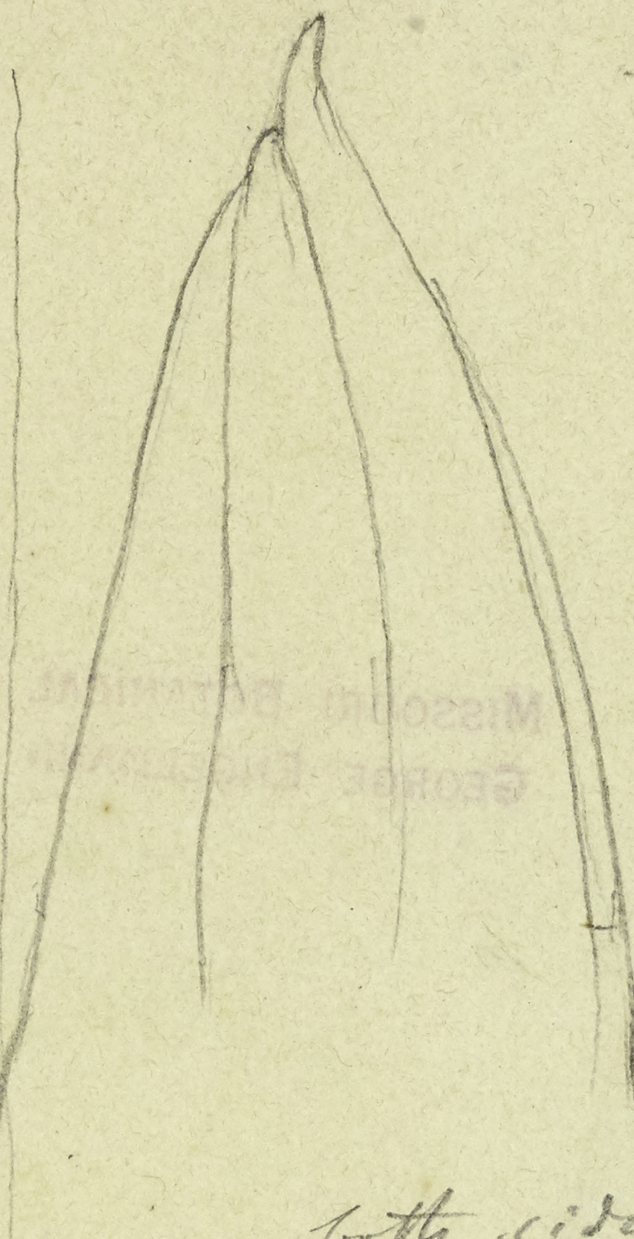
x60

x10

from undeveloped flower



tip of style x60



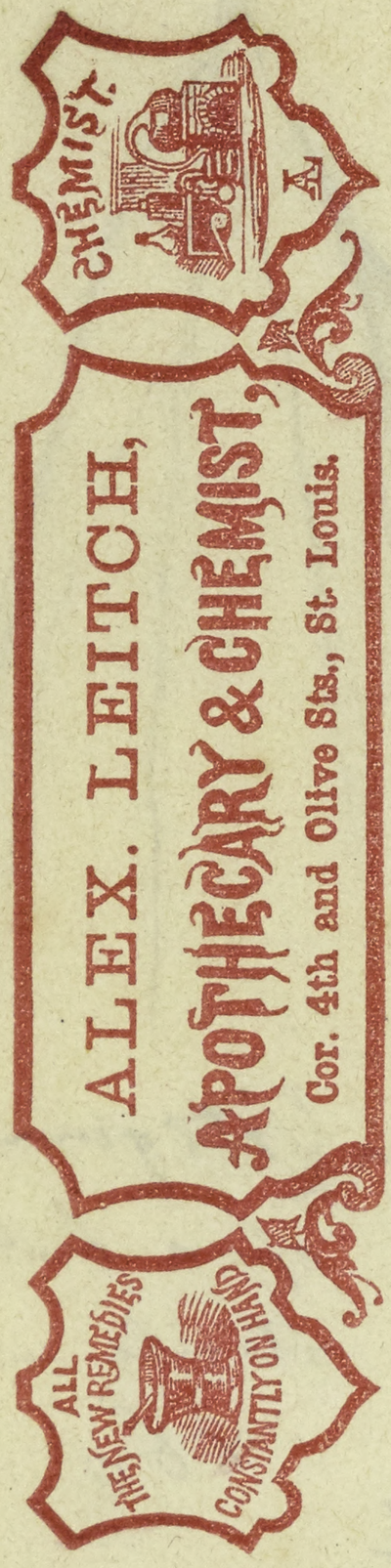
both sides of a (stigma or) end of style of a fully open flower — sterile — abortive! x60

no stigmatic part

6 or 7 downy spinous tips closed

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

3024



MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Opuntia grandis

H. B. Mission
June 22 1864

areolae ~ ovary $\frac{8}{13}$ arrayed, abt 40, or 35
lower sepals of ovary 1–1½, upper ones 2–2½ lin long,
red-orange
abt 13 sepals of tube → 8 or 9 petals
sepals lacerate, acute
petals, oblanceolate spatulate, cuspidate

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

3025

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

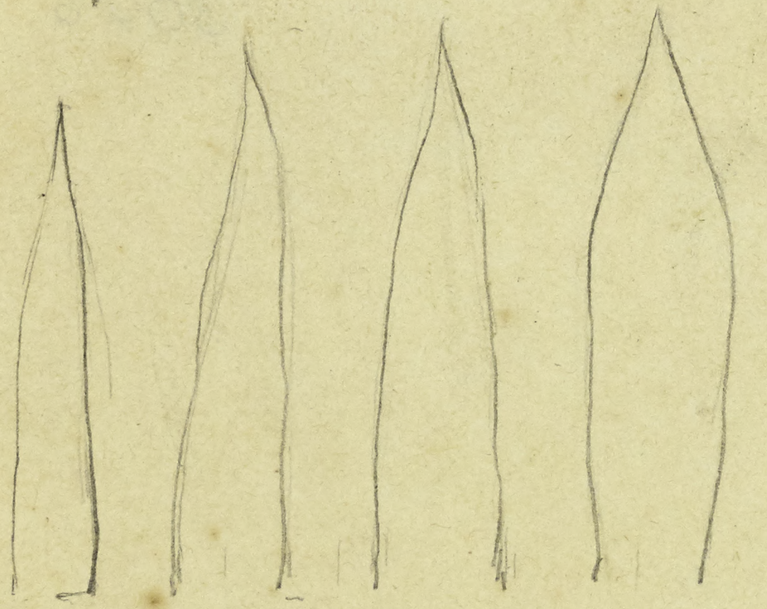
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Opuntia grandis

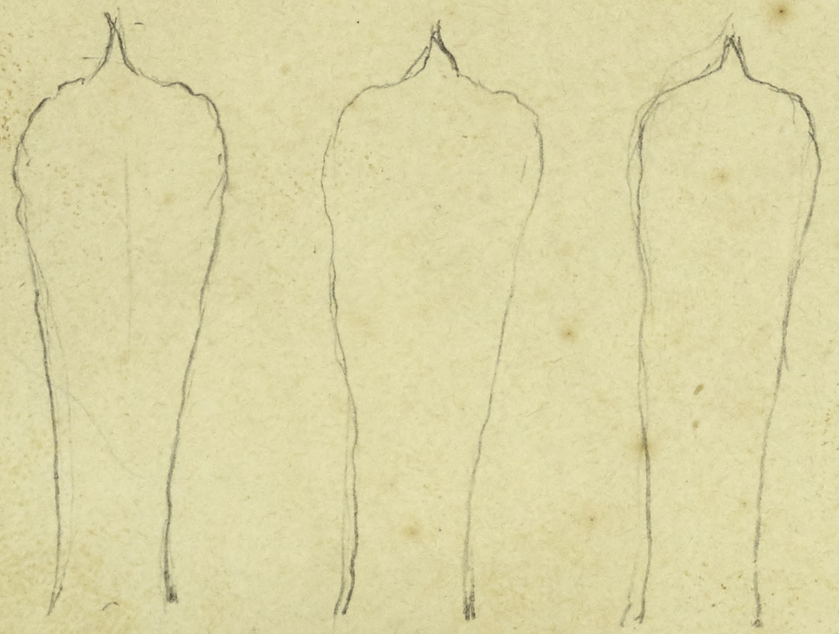
July 1865

H. A. Nelson ex Salm-Dyck

Inflorate, soaked

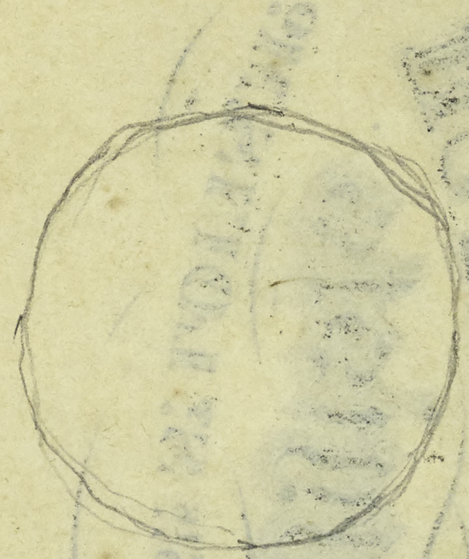


X4 13. sepals



R. petals X4

X30 anthers of same flow



Pollen 0.035"
— 0.038

dry & mounted

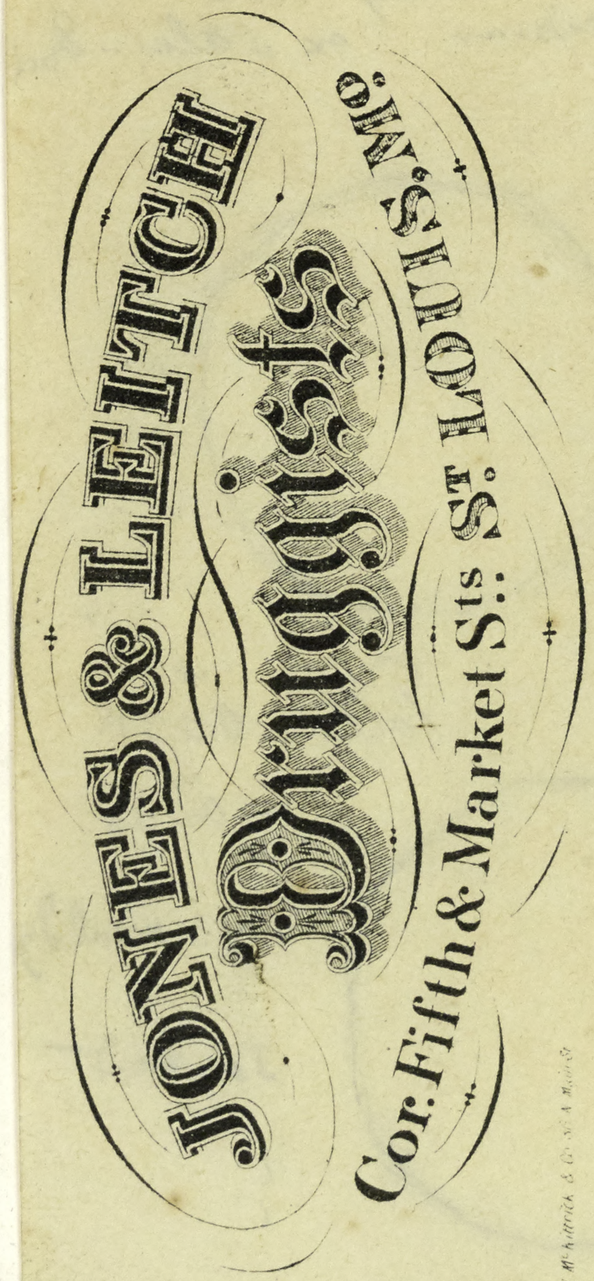
soaked

Pollen X 415

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

3026

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS



0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Jun & July 1865

Operculi grandly
abundantly flowering — ovary with 30–32
some flowers with pubelli $\frac{5}{13}$ others $\frac{4}{11}$
arrangement; 5 & 8 or 4 & 7 nibs prominent;

ovary sterile or with ovules
stigmatic divisions often pointed, closed,
(abortive) forming a pointed end of style,
as figured in June 1864.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

ALEX. LEITCH.

APOTHECARY & PHARMACEUTIST,

Marble Building Cor. Fourth & Olive Sts. St Louis, Mo.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

3027

cm 0 1 2 3 4 5 6 7 8 9 10
MISSOURI BOTANICAL GARDEN
copyright reserved

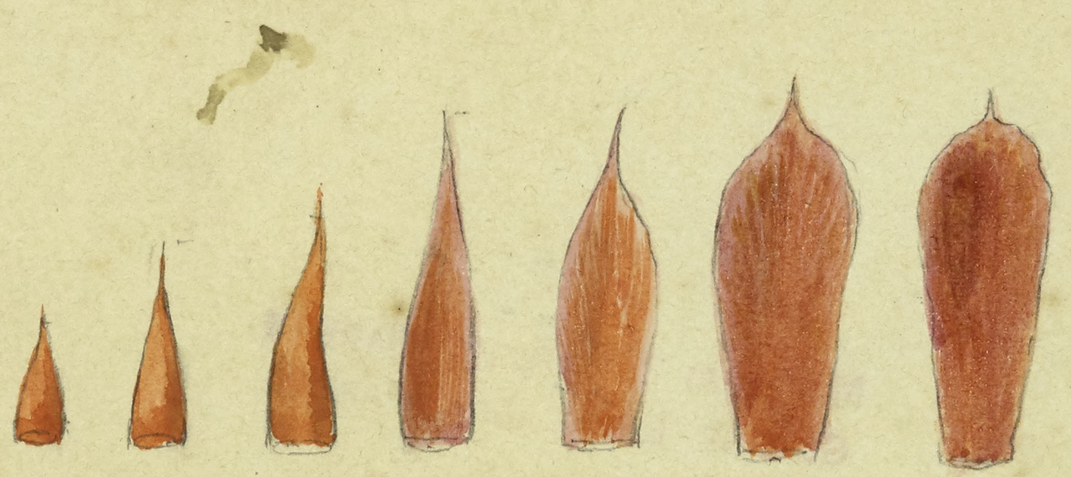
opuntia grandis

H. D. Rawson

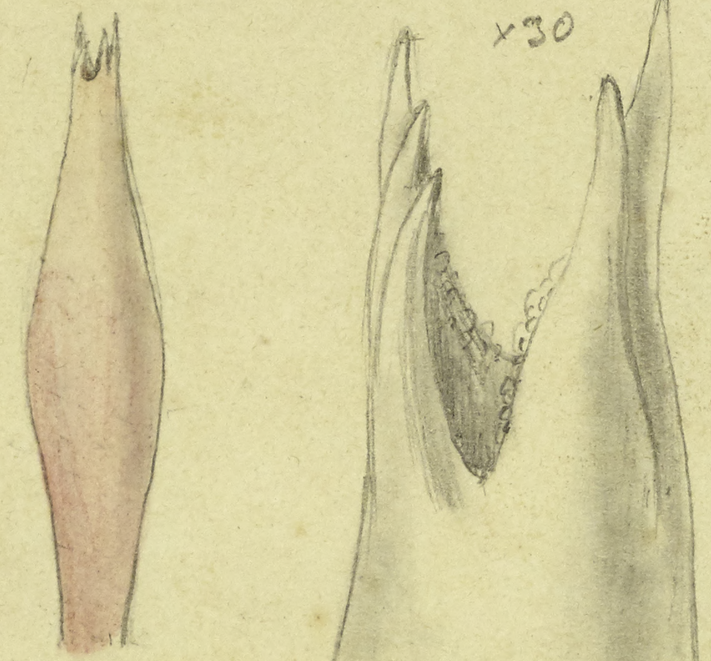
Aug. 1863

ovary with five poorly developed ovules

×4



sepals & petals ×2



×30

stigma of fresh flower

×60

stigmatose part ?

inside of two larger stigmata ×60

(smaller ones are smooth inside, and therefore abortive)

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

3028

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

JONES & LETTICH
Druggists
Cor. Fifth & Market Sts. St. LOUIS, MO.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

Operculi grandis

H.B. Mission June 22 1864

Allen
x 415

in water

dry

x 10

x 2

x 10

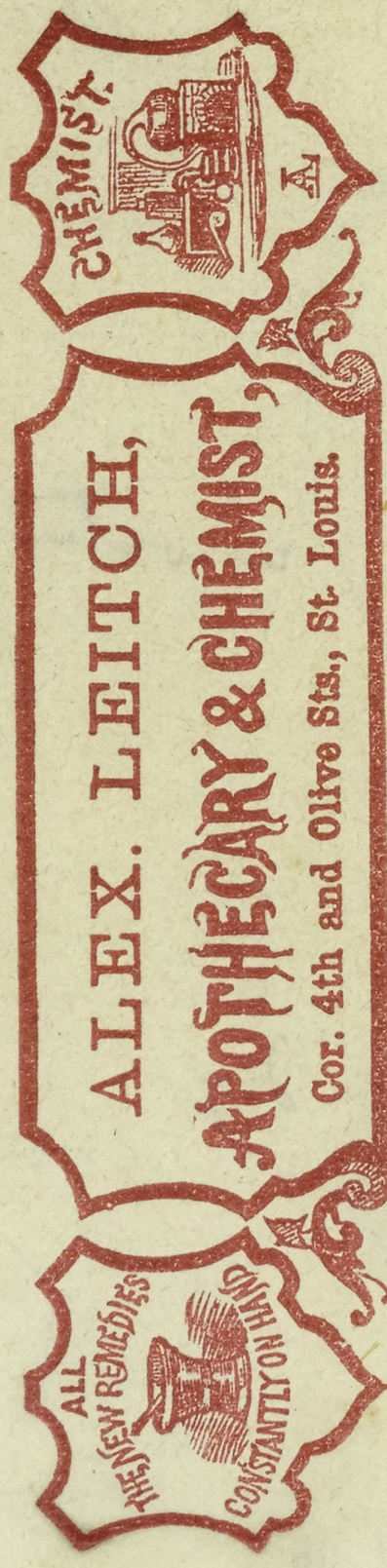
Diam of Allen

0.047 – 0.053

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

3029

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS



0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Opuntia Grandis
H B Mission

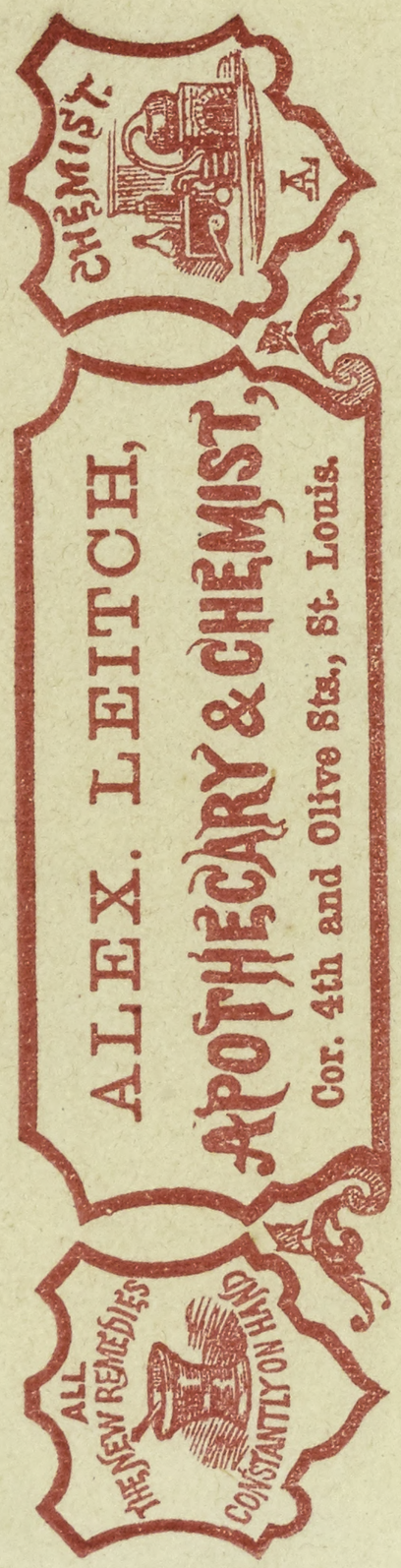
Jan 21 1864

× 30

no hair, but
vesicles on inside of
fruit ovules

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

3030



MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Opuntia grandis
HB. Mexico
aug 30 1863

m
0.044

soaked Pollen

Dry

m
0.039

micro. very minute
not always visible

pollen membrane
marked (dotted?)

×415

×415

emitting fovilla
& contracting

×153

×30

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

3031

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

JONES & LEITCH
Bijou Amiciæ
Cor. Fifth & Market Sts. St. LOUIS, MO.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Oct. 1861

Opuntia grandis
Hook Bot Missouri.

x4

strong bright
brown bristles
white spine

young joints and
leaves bright
brownish red

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI
BOTANICAL
GARDEN.

3032

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

M. W. ALEXANDER,
SOUTH-EAST CORNER OF FOURTH AND MARKET STREETS,
ST. LOUIS.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Sept 1867

Opuntia grandis Hort Angl. Pfeiff 155. Salm 237 (flora Hort bot Monsour. sub nom "37 O. grandis" ex Hort Dyck erecto-patula, 2½' alta, glaucescens, articulis late obovatis, s. ellipticis, 6-8" long 4-6" lati, areolis inermes s. aculeis 1-3 albis munitae, cum foliis aculis rasorulis purpureo-fuscis, foliis . . . .

Pfeiffer says that the joints are 4-5" long, but below makes the 5-7" long though only 2-3" wide. —

July 23 1863 past flowering! several plants have been in bloom a few weeks ago. Remains of flowers show ovary scarcely 1 inch long, covered with 35-40 areolae on tuberculate pulvilli, with gray tomentum and redbrown bristles.

Aug 29 1863. A flower in full bloom.
Ovary obconic, tuberculate green purple, 35 pulvilli with scarlet and few darker sepals, short gray wool and bright brown bristles; 13 exterior sepals of tube, more or less scarlet like leaves, subulate, more or less terete, gradually longer, 5 interior sepals lanceolate compressed or semiterete, concave or flat above, convex below; inner most or oblanceolate - cuspidate or acuminate; 8 petals spatulate cuspidate. Petals opened 2 lines or 2¼ wide, 6-6½ long. Color scarlet, with fine yellow striolation.

Lower half of tube naked, upper half with short stamens, the anthers forming the usual funnel; filaments red, papillose, anthers white, less than 1 l. long, very slightly cuspidate mucronate. Pollen dry very uniformly dodecahedral, 0.039 l. in diam, when soaked in water larger (0.044 l.) and globular.

Style scarlet in anthesis 5-6 l. long, shorter than stamens; stigma 5 lobed, lobes spreading upwards in 5 unequal

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

subulate

irregular ports, the larger ones of which seem stigmatose on the inner base — The space between the 5 ports was filled with pollen.

Ovarian cavity with a very few (abortive?) ovula.

Reexamining O. stenopetala I find all its sepals & petals subulate, very small, while wool on pubolli much larger.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.